

Patent claims

1. A sealable, biaxially oriented and coextruded polyester film with one matt side and with at least one base layer (B) which comprises at least 80 % by weight of thermoplastic polyester, and with a sealable outer layer (A), and with a matt outer layer (C),
wherein
 - a) the sealable outer layer (A) has a minimum sealing temperature below 120 °C, a seal seam strength of at least 1.0 N/15 mm of film width, an R_a value of at most 100 nm, and a value measured for surface gas flow in the range from 20 to 4000 s;
 - b) the matt outer layer (C) has a gloss of at most 100, an R_a value of at least 150 nm, and a value measured for surface gas flow in the range from 0 to 80 s, and
 - c) the haze is smaller than 50 %.
2. The sealable polyester film with one matt side as claimed in claim 1, wherein the sealable outer layer (A) comprises an amorphous copolyester whose structure is composed of ethylene terephthalate units and ethylene isophthalate units and of ethylene glycol units.
3. The sealable polyester film with one matt side as claimed in claim 1 or 2, wherein the amorphous copolyester of the sealable outer layer (A) comprises a proportion of from 40 to 95 mol% of ethylene terephthalate and a proportion of from 60

- 5 to 5 mol% of ethylene isophthalate, preferably a proportion of from 50 to 90 mol% of ethylene terephthalate and a proportion of from 50 to 10 mol% of ethylene isophthalate, particularly preferably a proportion of from 60 to 85 mol% of ethylene terephthalate and a proportion of from 40 to 15 mol% of ethylene isophthalate.
- 10 4. The sealable polyester film with one matt side as claimed in any of claims 1 to 3, wherein the sealable outer layer (A) has a thickness in the range from 0.2 to 3 μm .
- 15 5. The sealable polyester film with one matt side as claimed in any of claims 1 to 4, wherein the sealable outer layer (A) comprises an amount in the range from 0.01 to 1 % by weight, preferably from 0.015 to 0.08 % by weight, particularly preferably from 0.02 to 0.08 % by weight, of
20 antiblocking agent.
- 25 6. The sealable polyester film with one matt side as claimed in any of claims 1 to 5, wherein the coefficient of friction of the sealable outer layer (A) with respect to itself is smaller than or equal to 1.0, preferably smaller than or equal to 0.8.
- 30 7. The sealable polyester film with one matt side as claimed in any of claims 1 to 6, wherein the outer layer (C) comprises an amount in the range from 0.5 to 20 % by weight, based on the total weight of the outer layer (C), preferably from 1.0 to 18 % by weight, particularly preferably from 1.5

to 16 % by weight, of particles with an average particle diameter, stated as their d_{50} value, greater than or equal to 1 μm , preferably in the range from 1.5 to 10 μm .

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8. The sealable film with one matt side as claimed in any of claims 1 to 7, wherein the outer layer (C) comprises, besides polyethylene terephthalate homopolymer or polyethylene terephthalate copolymer, an additional polymeric component I which is composed of the condensate of the following monomers or of their derivatives capable of forming polyesters:

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a) from 40 to 99 mol% of isophthalic acid;
b) from 0 to 60 mol% of at least one aliphatic dicarboxylic acid having the formula $\text{HOOC}(\text{CH}_2)_n\text{COOH}$, where n is in the range from 1 to 11;

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c) from 1 to 15 mol% of at least one sulfomonomer containing an alkali metal sulfonate group on the aromatic moiety of a dicarboxylic acid;

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d) the stoichiometric amount of a copolymerizable aliphatic or cycloaliphatic glycol having from 2 to 11 carbon atoms needed to form 100 mol% of condensate;

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where each of the percentages is based on the total amount of the monomers forming component I.

9. A process for producing a sealable film with one matt side as claimed in any of claims 1 to 8 via coextrusion, in which the polymers or polymer

mixtures corresponding to the individual layers (A), (B), and (C) of the film are compressed and plastified in an extruder, where any additives added may be present in the polymer or polymer mixture at this stage, and in which the melts are then simultaneously extruded through a slot die, the extruded multilayer melt is then drawn off on one or more take-off rolls, whereupon the melt cools and solidifies to give a prefilm, and in which the prefilm is then biaxially stretched, the biaxially stretched film is heat-set and, where appropriate, also corona-treated or flame-treated on the surface layer intended for treatment, and is then wound up, which comprises carrying out the longitudinal stretching at a temperature in the range from 80 to 130 °C and the transverse stretching in the range from 90 to 150 °C, and setting a longitudinal stretching ratio in the range from 2.5:1 to 6:1, preferably from 3:1 to 5.5:1, and a transverse stretching ratio in the range from 3.0:1 to 5.0:1, preferably from 3.5:1 to 4.5:1.

10. The process as claimed in claim 9, wherein the biaxially stretched film is kept at a temperature in the range from 150 to 250 °C for a period of from 0.1 to 10 s for heat-setting, and is then wound up.

11. The process as claimed in claim 9 or 10, wherein one or both surfaces of the film are also corona- or flame-treated after heat-setting, the intensity of treatment being adjusted so as to give a surface tension in the range above 45 mN/m for the

treated surface.

12. The process as claimed in any of claims 9 to 11,
wherein an amount in the range from 10 to 60 % by
5 weight, based on the total weight of the film, of
chopped material produced during the production of
the film is reintroduced as regrind into the
extrusion process.
- 10 13. The use of a sealable film with one matt side as
claimed in any of claims 1 to 8 for flexible
packaging, in particular on high-speed packaging
machinery.